Amendments to the Specification:

Please replace paragraph [0002] with the following amended paragraph:

[0002] Generally, the mammalian circulatory system is comprised of a heart, which acts as a pump, and a system of blood vessels which transport the blood to various points in the body. Due to the force exerted by the flowing blood on the blood vessel the blood vessels may develop a variety of vascular disabilities or dysfunctions. One common vascular dysfunction, commonly known as an aneurysm, results from the abnormal widening of the blood vessel. Typically, vascular aneurysms are formed as a result of the weakening of the wall of a blood vessel and subsequent ballooning of the vessel wall. As shown in Figure 1, the aneurysm 10 often comprises a narrow neck portion 12 which is in communication with the blood vessel 14 and a dome portion 16 in communication with the neck portion 12. As shown in Figure 1 the neck portion 12 and the dome portion 16 form a cavity 18. Aneurysms have been known to form in a plurality of ~~location~~ locations though the body, including, for example, the brain, the abdomen, and throughout the circulatory system.

Please replace paragraph [0008] with the following amended paragraph:

[0008] The present invention solves the aforementioned problems in that the aneurysm treatment device of the present invention effectively occludes or inhibits blood flow to an aneurysm without substantially impairing blood flow through the blood vessel. In addition, the aneurysm treatment device of the present invention is capable of being applied to a plurality of aneurysms formed on blood vessels throughout the body. Those skilled in the art will appreciate that the present invention is easy to manufacture and may be manufactured from a plurality of materials.

Please replace paragraph [0009] with the following amended paragraph:

[0009] The aneurysm treatment device of the present invention comprises at least one support member and reactive material selectively applied to the support member. The at least one support member, which has at least a first surface capable of receiving the reactive material, provides a substrate for receiving the reactive material. Alternatively, the at least one support member may also provide support to weakened vascular tissue. The reactive material has a non-reacted state and a reacted state. In a reacted ~~stated~~ state the reactive material, as selectively applied to the at least one support member, is capable of restricting or occluding the flow of blood to the aneurysm. In one embodiment, the reactive material is a hydrogel that undergoes controlled volumetric expansion in response to changes in the environment, such as changes in pH or temperature (i.e., the hydrogel is "stimulus-expandable"). In an alternate embodiment, the at least one support member may be manufactured from or otherwise incorporate reactive material therein. The device is preferably controllably released from an elongate delivery apparatus. The release mechanism may be any of the vaso-occlusive device and stent detachment means known in the art including but not limited to mechanical, electrolytic, electro-mechanical, thermal, hydraulic, and shape-memory means.

Please replace paragraph [0048] with the following amended paragraph:

[0048] The reactive coating or material 28 may be fabricated from a plurality of materials capable of expanding or volumetrically changing over time within the presence of blood or other fluid. In a preferred embodiment, the applicant's co-pending U.S. Patent Application Serial No. 09/804,935 filed on 3/13/01 entitled "Hydrogels That Undergo Volumetric Expansion In Response To Changes In Their Environment And Their Methods

Of Manufacture And Use" discloses a stimulus-expandable hydrogel which is particularly useful as a reactive coating or material 28 for treating aneurysms. The stimulus-expandable hydrogel can be prepared by forming a liquid reaction mixture that contains a) monomer(s) and/or polymer(s) at least portion(s) of which are sensitive to environmental changes (e.g., changes in pH or temperature), b) a crosslinker and c) a polymerization initiator. If desired, a porosigen, (e.g., sodium chloride, ice crystals, and sucrose) may be incorporated into the liquid reaction mixture. Porosity is formed by the subsequent removal of the porosigen from the resultant solid hydrogel (e.g., by repeated washing). Typically, a solvent will also be used to dissolve solid monomer(s) and/or polymers. However, in cases where only liquid monomers are used, there may be no need for inclusion of a solvent. Generally, the controlled rate of expansion of the present invention is imparted through the incorporation of ethylenically unsaturated monomers with ionizable functional groups, (e.g. amines, carboxylic acids). For example, if acrylic acid is incorporated into the crosslinked network, the hydrogel is incubated in a low pH solution to protonate the carboxylic acids. After the excess low pH solution has been rinsed away and the hydrogel dried, the hydrogel can be introduced through a microcatheter filled with saline at physiological pH or blood. The hydrogel cannot expand until the carboxylic acid groups deprotonate. Conversely, if an amine containing monomer is incorporated into the crosslinked network, the hydrogel is incubated in a high pH solution to deprotonate amines. After the excess high pH solution has been rinsed away and the hydrogel dried, the hydrogel can be introduced through a microcatheter filled with saline at physiological pH or blood. The hydrogel cannot expand until the amine groups protonate. ~~The above above-referenced hydrogel comprises 1.25g (0.021 moles) acrylamide, 0.87g (0.009 moles) sodium acrylate, 0.005g (0.00003 moles) N,N-methylenebisacrylamide, 7.95g water, and 4.5g sodium chloride (<10 micron particle size) added to an amber jar. The initiators, 53 microliters of N,N,N',N-tetramethylethylenediamine and 65 microliters of 20% w/w ammonium persulfate in water, are added and the solution is aspirated into a 3-cc syringe. The solution is then injected into 0.025" ID tubing and allowed to polmerize for 2 hours. The tubing is cut into 2-inch sections and dried in a vacuum oven. The dried hydrogel is washed 3 times in~~

~~distilled water for 10-12 hours, 2 hours, and two hours, respectively, to remove porosigen, any unreacted monomer and any unincorporated monomers. The hydrogel may then be cut into sections of approximately 0.100 inch length called "pellets" and skewered with a platinum coil/wire assembly. In the alternative, the hydrogel may be drawn or formed into fibrous strands or portions of similar size and dimension as the support members 24. These pellets or strands are then hydrated in alcohol and dried under vacuum at approximately 55C for about 2 hours.~~

Please replace paragraph [0049] with the following amended paragraph:

[0049] In one embodiment, the above above-referenced stimulus-expandable hydrogel comprises 1.52g (0.021 moles) acrylamide, 0.87g (0.009 moles) sodium acrylate, 0.005g (0.00003 moles) N,N-methylenebisacrylamide, 7.95g water, and 4.5g sodium chloride (<10 micron particle size) added to an amber jar. The initiators, 53 microliters of N,N,N',N-tetramethylethylenediamine and 65 microliters of 20% w/w ammonium persulfate in water, are added and the solution is aspirated into a 3-cc syringe. The solution is then injected into 0.025" ID tubing and allowed to polymerize for 2 hours. ~~The tubing is cut into 2-inch sections~~ and dried in a vacuum oven. The dried hydrogel is washed 3 times in distilled water for 10-12 hours, 2 hours, and two hours, respectively, to remove porosigen, any unreacted monomer and any unincorporated monomers. ~~The hydrogel may then be cut into sections of approximately 0.100 inch length called "pellets" and skewered with a platinum coil/wire assembly. In the alternative,~~ The hydrogel may be drawn or formed into fibrous strands or portions of similar size and dimension as the support members 24. These ~~pellets or~~ strands are then hydrated in alcohol and dried under vacuum at approximately 55C for about 2 hours. Thereafter, the dried hydrogel is ~~pellets or strands are then~~ placed in 50% hydrochloric acid/50% water and incubated for about 70 hours at 37C. After the incubation, the excess hydrochloric acid solution is rinsed off of the pellets or strands with consecutive rinses of a) 70% isopropyl alcohol: 30%water for about 5 minutes, b) 100% isopropyl alcohol for about 15 minutes, c) 100% isopropyl for about 15

minutes and d) 100% isopropyl alcohol for about 15 minutes. The hydrogel is ~~pellets or strands are~~ then dried under vacuum at 55C for at least 2 hours. Prior to or following the complete drying process, the hydrogel ~~pellets or strands~~ may be selectively applied to the at least one support member 24 as desired in a plurality of ways. If desired, the hydrogel strands may be utilized as support members 24 without reinforcement. Thereafter, the hydrogel may be selectively applied to a support member in a plurality of manners. In one embodiment, the reactive material is applied to the entire surface of a support member 24. In an alternate embodiment, the reactive material is selectively applied to a portion of the support member 24. For example, the reactive material may be selectively applied to the portion of a support member 24 which will engage a wall of a blood vessel. Once implanted in vivo, the hydrogel of the present embodiment becomes fully swollen (to diameters of about 0.035 inch) after approximately one hour at physiological pH (about 7.4). Alternatively, the hydrogel strands may be woven, or integrated into the support structure. In addition, the support structure may be manufactured from hydrogel material.

Please replace paragraph [0052] with the following amended paragraph:

[0052] Figures 13-15 show yet another embodiment of the present invention useful in treating aneurysms formed on weakened vascular tissue. Figures 13-15 show various expandable devices, commonly referred to as "stents", capable of embolizing or isolating an aneurysm formed on weakened blood vessel tissue. In an alternate embodiment, the intraluminal vascular prosthetic devices of the present invention may be used to provide mechanical support to weakened vascular tissue. As shown in Figure 13, the helical expandable stent 54 comprises a first end 56 and a second end 58, having cylindrical body member 60 disposed therebetween. The cylindrical body member 60 defines a central lumen 62 co-axially aligned with the longitudinal axis 64 of the stent 54. The helical expandable stent 54 has a first diameter, D, thereby enabling insertion and positioning of the device within a blood vessel, and a larger second diameter, D', which is capable of engaging and supporting a blood vessel wall. As shown, a reactive material is selectively

applied to the external surface of the helical expandable stent 54. Figure 14 shows an alternate embodiment of the helical expandable stent 54, comprising a cylindrical body member 60 having a first end 56 and a second end 58. The cylindrical body member 60 further comprises at least one reactive section 66 disposed thereon, thereby enabling the embolization or isolation of an aneurysm while limiting blood vessel occlusion. Figure 15 shows cross sectional view of the present embodiment positioned within a blood vessel 14, wherein the at least one reactive section 66 occludes or otherwise inhibits blood flow to an aneurysm 10.